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### AMENDMENTS TO THE CLAIMS

This listing of claims will replace all prior versions, and listings, of claims in the application:

1. (currently amended) A method to retrieve elevation data, the method comprising:  
    locating a first compressed portion of a Digital Elevation Model (DEM) using a first index, the Digital Elevation Model comprising a plurality of compressed portions which are portions of compressed profiles in a first tile of the Digital Elevation Model, the compressed portions stored in one of: a Memory Mapped File (MMF), Random Access Memory (RAM), and a file in a file system on a digital processing system, the plurality of compressed portions including which includes the first compressed portion, the first index pointing to a storage location where the first compressed portion is stored; [[and]]  
    decompressing the first compressed portion to retrieve first elevation data for at least one sample point in the Digital Elevation Model;  
    identifying the first tile, the first tile containing a first location and being one of a plurality of tiles in an area of the Digital Elevation Model; and  
    identifying a first profile that is in the vicinity of the first location, the first compressed portion being a portion of the first profile.
2. (withdrawn) A method as in claim 1 wherein the plurality of compressed portions are stored in one of:
  - a) a Memory Mapped File (MMF);
  - b) Random Access Memory (RAM); and
  - c) a file in a file system on a digital processing system.

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3. (withdrawn) A method as in claim 2 wherein the plurality of compressed portions are portions of compressed profiles in a first tile of the Digital Elevation Model.
4. (withdrawn) A method as in claim 3 further comprising:
  - identifying the first tile, the first tile containing a first location and being one of a plurality of tiles in an area of the Digital Elevation Model; and
  - identifying a first profile that is in the vicinity of the first location, the first compressed portion being a portion of the first profile.
5. (withdrawn) A method as in claim 4 further comprising:
  - identifying the area, the area containing the first location and being one of a plurality of areas of the Digital Elevation Model.
6. (original) A method as in claim 1 wherein said decompressing the first compressed portion comprises:
  - run length decoding the first compressed portion to generate scaled elevation data;
  - inverse scaling the scaled elevation data to generate normalized elevation data;
  - and
  - adding a reference elevation to the normalized elevation data to generate the first elevation data.
7. (original) A method as in claim 1 further comprising:
  - identifying a plurality of sample points in the vicinity of a first location;
  - retrieving elevations of the plurality of sample points from the Digital Elevation Model; and
  - computing an elevation of the first location from an interpolation using the elevations of the plurality of sample points.

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8. (original) A method as in claim 7 further comprising:  
performing a coordinate transformation to express a horizontal position of the first location in a coordinate system used by the Digital Elevation Model.
9. (original) A method as in claim 7 further comprising:  
providing the elevation of the first location to a Position Determination Entity to perform altitude aiding in a positioning system.
10. (original) A method as in claim 9 wherein said computing the elevation of the first location comprises:  
performing a coordinate transformation such that the elevation of first location is expressed in a coordinate system used by the Position Determination Entity.
11. (withdrawn) A method to store elevation data, the method comprising:  
compressing elevation data of a first portion of a Digital Elevation Model (DEM) to generate first compressed elevation data;  
storing the first compressed elevation data in a storage location pointed to by a first index; and  
storing the first index.
12. (withdrawn) A method as in claim 11 further comprising:  
storing parameters required for determining whether or not a location is in the first portion of the Digital Elevation Model.

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13. (withdrawn) A method as in claim 11 further comprising:  
storing data specifying a coordinate system used to represent the elevation data  
of the first portion of the Digital Elevation Model.
14. (withdrawn) A method as in claim 11 wherein said compressing the elevation data  
of the first portion comprises:  
subtracting a reference elevation from the elevation data of the first portion of  
the Digital Elevation Model (DEM) to generate normalized elevation  
data; and  
scaling the normalized elevation data to generate scaled elevation data.
15. (withdrawn) A method as in claim 14 wherein said compressing the elevation data  
of the first portion further comprises:  
run length encoding the scaled elevation data to generate the first compressed  
elevation data.
16. (withdrawn) A method as in claim 11 wherein the first portion is a profile of the  
Digital Elevation Model.
17. (withdrawn) A method as in claim 11 further comprising:  
dividing an area of the Digital Elevation Model into a plurality of tiles; and  
storing parameters required for determining whether or not a location is in one  
of the plurality of tiles;  
wherein the first portion is one of a plurality of profiles in one of the plurality of  
tiles.

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18. (withdrawn) A method as in claim 17 further comprising:  
dividing the Digital Elevation Model into a plurality of areas; and  
storing parameters required for determining whether or not a location is in one  
of the plurality of areas.

19. (currently amended) A machine readable media containing executable computer  
program instructions which when executed by a digital processing system cause said  
system to perform a method to retrieve elevation data, the method comprising:  
locating a first compressed portion of a Digital Elevation Model (DEM) using a  
first index, the Digital Elevation Model comprising a plurality of  
compressed portions which are portions of compressed profiles in a first  
tile of the Digital Elevation Model, the plurality of compressed portions  
stored in one of: a Memory Mapped File (MMF), Random Access  
Memory (RAM), and a file in a file system on a digital processing  
system, the plurality of compressed portions including which includes  
the first compressed portion, the first index pointing to a storage  
location where the first compressed portion is stored; [[and]]  
decompressing the first compressed portion to retrieve first elevation data for  
at least one sample point in the Digital Elevation Model;  
identifying the first tile, the first tile containing a first location and being one of  
a plurality of tiles in an area of the Digital Elevation Model; and  
identifying a first profile that is in the vicinity of the first location, the first  
compressed portion being a portion of the first profile.

20. (withdrawn) A media as in claim 19 wherein the plurality of compressed portions  
are stored in one of:

- a) a Memory Mapped File (MMF);
- b) Random Access Memory (RAM); and

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c) a file in a file system on a digital processing system.

21. (withdrawn) A media as in claim 20 wherein the plurality of compressed portions are portions of compressed profiles in a first tile of the Digital Elevation Model.

22. (withdrawn) A media as in claim 21 wherein the method further comprises:  
identifying the first tile, the first tile containing a first location and being one of a plurality of tiles in an area of the Digital Elevation Model; and  
identifying a first profile that is in the vicinity of the first location, the first compressed portion being a portion of the first profile.

23. (withdrawn) A media as in claim 22 wherein the method further comprises:  
identifying the area, the area containing the first location and being one of a plurality of areas of the Digital Elevation Model.

24. (original) A media as in claim 19 wherein said decompressing the first compressed portion comprises:

run length decoding the first compressed portion to generate scaled elevation data;  
inverse scaling the scaled elevation data to generate normalized elevation data;  
and  
adding a reference elevation to the normalized elevation data to generate the first elevation data.

25. (original) A media as in claim 19 wherein the method further comprises:  
identifying a plurality of sample points in the vicinity of a first location;  
retrieving elevations of the plurality of sample points from the Digital Elevation Model; and

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computing an elevation of the first location from an interpolation using the elevations of the plurality of sample points.

26. (original) A media as in claim 25 wherein the method further comprises:  
performing a coordinate transformation to express a horizontal position of the first location in a coordinate system used by the Digital Elevation Model.
27. (original) A media as in claim 25 wherein the method further comprises:  
providing the elevation of the first location to a Position Determination Entity to perform altitude aiding in a positioning system.
28. (original) A media as in claim 27 wherein said computing the elevation of the first location comprises:  
performing a coordinate transformation such that the elevation of first location is expressed in a coordinate system used by the Position Determination Entity.
29. (withdrawn) A machine readable media containing executable computer program instructions which when executed by a digital processing system cause said system to perform a method to store elevation data, the method comprising:  
compressing elevation data of a first portion of a Digital Elevation Model (DEM) to generate first compressed elevation data;  
storing the first compressed elevation data in a storage location pointed to by a first index; and  
storing the first index.

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30. (withdrawn) A media as in claim 29 wherein the method further comprises:  
storing parameters required for determining whether or not a location is in the  
first portion of the Digital Elevation Model.
31. (withdrawn) A media as in claim 29 wherein the method further comprises:  
storing data specifying a coordinate system used to represent the elevation data  
of the first portion of the Digital Elevation Model.
32. (withdrawn) A media as in claim 29 wherein said compressing the elevation data of  
the first portion comprises:  
subtracting a reference elevation from the elevation data of the first portion of  
the Digital Elevation Model (DEM) to generate normalized elevation  
data; and  
scaling the normalized elevation data to generate scaled elevation data.
33. (withdrawn) A media as in claim 32 wherein said compressing the elevation data of  
the first portion further comprises:  
run length encoding the scaled elevation data to generate the first compressed  
elevation data.
34. (withdrawn) A media as in claim 29 wherein the first portion is a profile of the  
Digital Elevation Model.
35. (withdrawn) A media as in claim 29 wherein the method further comprises:  
dividing an area of the Digital Elevation Model into a plurality of tiles; and  
storing parameters required for determining whether or not a location is in one  
of the plurality of tiles;  
wherein the first portion is one of a plurality of profiles in one of the plurality of  
tiles.



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36. (withdrawn) A media as in claim 35 wherein the method further comprises:  
dividing the Digital Elevation Model into a plurality of areas; and  
storing parameters required for determining whether or not a location is in one  
of the plurality of areas.

37. (currently amended) A digital processing system to retrieve elevation data, the  
digital processing system comprising:

means for locating a first compressed portion of a Digital Elevation Model  
(DEM) using a first index, the Digital Elevation Model comprising a  
plurality of compressed portions which are portions of compressed  
profiles in a first tile of the Digital Elevation Model, the plurality of  
compressed portions stored in one of: a Memory Mapped File (MMF),  
Random Access Memory (RAM), and a file in a file system on a digital  
processing system, the plurality of compressed portions including which  
includes the first compressed portion, the first index pointing to a  
storage location where the first compressed portion is stored; [[and]]  
means for decompressing the first compressed portion to retrieve first elevation  
data for at least one sample point in the Digital Elevation Model;  
means for identifying the first tile, the first tile containing a first location and  
being one of a plurality of tiles in an area of the Digital Elevation  
Model; and  
means for identifying a first profile that is in the vicinity of the first location, the  
first compressed portion being a portion of the first profile.

38. (withdrawn) A digital processing system as in claim 37 wherein the plurality of  
compressed portions are stored in one of:

- a) a Memory Mapped File (MMF);
- b) Random Access Memory (RAM); and

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c) a file in a file system on the digital processing system.

39. (withdrawn) A digital processing system as in claim 38 wherein the plurality of compressed portions are portions of compressed profiles in a first tile of the Digital Elevation Model.

40. (withdrawn) A digital processing system as in claim 39 further comprising:  
means for identifying the first tile, the first tile containing a first location and being one of a plurality of tiles in an area of the Digital Elevation Model; and  
means for identifying a first profile that is in the vicinity of the first location, the first compressed portion being a portion of the first profile.

41. (withdrawn) A digital processing system as in claim 40 further comprising:  
means for identifying the area, the area containing the first location and being one of a plurality of areas of the Digital Elevation Model.

42. (original) A digital processing system as in claim 37 wherein said means for decompressing the first compressed portion comprises:  
means for run length decoding the first compressed portion to generate scaled elevation data;  
means for inverse scaling the scaled elevation data to generate normalized elevation data; and  
means for adding a reference elevation to the normalized elevation data to generate the first elevation data.

43. (original) A digital processing system as in claim 37 further comprising:  
means for identifying a plurality of sample points in the vicinity of a first location;

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means for retrieving elevations of the plurality of sample points from the Digital Elevation Model; and  
means for computing an elevation of the first location from an interpolation using the elevations of the plurality of sample points.

44. (original) A digital processing system as in claim 43 further comprising:  
means for performing a coordinate transformation to express a horizontal position of the first location in a coordinate system used by the Digital Elevation Model.
45. (original) A digital processing system as in claim 43 further comprising:  
means for providing the elevation of the first location to a Position Determination Entity to perform altitude aiding in a positioning system.
46. (original) A digital processing system as in claim 45 wherein said means for computing the elevation of the first location comprises:  
means for performing a coordinate transformation such that the elevation of first location is expressed in a coordinate system used by the Position Determination Entity.
47. (withdrawn) A digital processing system to store elevation data, the digital processing system comprising:  
means for compressing elevation data of a first portion of a Digital Elevation Model (DEM) to generate first compressed elevation data;  
means for storing the first compressed elevation data in a storage location pointed to by a first index; and  
means for storing the first index.
48. (withdrawn) A digital processing system as in claim 47 further comprising:

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means for storing parameters required for determining whether or not a location is in the first portion of the Digital Elevation Model.

49. (withdrawn) A digital processing system as in claim 47 further comprising:  
means for storing data specifying a coordinate system used to represent the elevation data of the first portion of the Digital Elevation Model.

50. (withdrawn) A digital processing system as in claim 47 wherein said means for compressing the elevation data of the first portion comprises:  
means for subtracting a reference elevation from the elevation data of the first portion of the Digital Elevation Model (DEM) to generate normalized elevation data; and  
means for scaling the normalized elevation data to generate scaled elevation data.

51. (withdrawn) A digital processing system as in claim 50 wherein said means for compressing the elevation data of the first portion further comprises:  
means for run length encoding the scaled elevation data to generate the first compressed elevation data.

52. (withdrawn) A digital processing system as in claim 47 wherein the first portion is a profile of the Digital Elevation Model.

53. (withdrawn) A digital processing system as in claim 47 further comprising:  
means for dividing an area of the Digital Elevation Model into a plurality of tiles; and  
means for storing parameters required for determining whether or not a location is in one of the plurality of tiles;

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wherein the first portion is one of a plurality of profiles in one of the plurality of tiles.

54. (withdrawn) A digital processing system as in claim 53 further comprising:  
means for dividing the Digital Elevation Model into a plurality of areas; and  
means for storing parameters required for determining whether or not a  
location is in one of the plurality of areas.
55. (withdrawn) A machine readable media containing a data stream representing a  
Digital Elevation Model, the data stream being produced by a method comprising:  
compressing elevation data of a first portion of a Digital Elevation Model  
(DEM) to generate first compressed elevation data;  
storing the first compressed elevation data in a storage location pointed to by a  
first index as part of the data stream; and  
storing the first index as part of the data stream.
56. (withdrawn) A media as in claim 55 wherein the method further comprises:  
storing parameters required for determining whether or not a location is in the  
first portion of the Digital Elevation Model as part of the data stream.
57. (withdrawn) A media as in claim 55 wherein the method further comprises:  
storing data specifying a coordinate system used to represent the elevation data  
of the first portion of the Digital Elevation Model as part of the data  
stream.
58. (withdrawn) A media as in claim 55 wherein said compressing the elevation data of  
the first portion comprises:

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subtracting a reference elevation from the elevation data of the first portion of the Digital Elevation Model (DEM) to generate normalized elevation data; and  
scaling the normalized elevation data to generate scaled elevation data.

59. (withdrawn) A media as in claim 58 wherein said compressing the elevation data of the first portion further comprises:

run length encoding the scaled elevation data to generate the first compressed elevation data.

60. (new) A method to retrieve elevation data, the method comprising:

locating a first compressed portion of a Digital Elevation Model (DEM) using a first index, the Digital Elevation Model comprising a plurality of compressed portions which are portions of compressed profiles in a first tile of the Digital Elevation Model, the compressed portions stored in one of: a Memory Mapped File (MMF), Random Access Memory (RAM), and a file in a file system on a digital processing system, the plurality of compressed portions including the first compressed portion, the first index pointing to a storage location where the first compressed portion is stored;

decompressing the first compressed portion to retrieve first elevation data for at least one sample point in the Digital Elevation Model;

identifying the first tile, the first tile containing a first location and being one of a plurality of tiles in an area of the Digital Elevation Model;

identifying a first profile that is in the vicinity of the first location, the first compressed portion being a portion of the first profile; and

identifying the area, the area containing the first location and being one of a plurality of areas of the Digital Elevation Model.

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61. (new) A machine readable media containing executable computer program instructions which when executed by a digital processing system cause said system to perform a method to retrieve elevation data, the method comprising:

locating a first compressed portion of a Digital Elevation Model (DEM) using a first index, the Digital Elevation Model comprising a plurality of compressed portions which are portions of compressed profiles in a first tile of the Digital Elevation Model, the plurality of compressed portions stored in one of: a Memory Mapped File (MMF), Random Access Memory (RAM), and a file in a file system on a digital processing system, the plurality of compressed portions including the first compressed portion, the first index pointing to a storage location where the first compressed portion is stored;

decompressing the first compressed portion to retrieve first elevation data for at least one sample point in the Digital Elevation Model;

identifying the first tile, the first tile containing a first location and being one of a plurality of tiles in an area of the Digital Elevation Model;

identifying a first profile that is in the vicinity of the first location, the first compressed portion being a portion of the first profile; and

identifying the area, the area containing the first location and being one of a plurality of areas of the Digital Elevation Model.

62. (new) A digital processing system to retrieve elevation data, the digital processing system comprising:

means for locating a first compressed portion of a Digital Elevation Model (DEM) using a first index, the Digital Elevation Model comprising a plurality of compressed portions which are portions of compressed profiles in a first tile of the Digital Elevation Model, the plurality of compressed portions stored in one of: a Memory Mapped File (MMF), Random Access Memory (RAM), and a file in a file system on a digital

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processing system, the plurality of compressed portions including the first compressed portion, the first index pointing to a storage location where the first compressed portion is stored;

means for decompressing the first compressed portion to retrieve first elevation data for at least one sample point in the Digital Elevation Model;

means for identifying the first tile, the first tile containing a first location and being one of a plurality of tiles in an area of the Digital Elevation Model;

means for identifying a first profile that is in the vicinity of the first location, the first compressed portion being a portion of the first profile; and

means for identifying the area, the area containing the first location and being one of a plurality of areas of the Digital Elevation Model.